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ABSTRACT

Two surveys were conducted to determine the impact of administration of the Scholastic Aptitude Test (SAT) to students under 14 years of age. Survey I provided data from 1,846 students tested in January 1984, and on their parents; there were 1,606 parent-student matches among respondents (i.e., student and parent questionnaires from the same household). Students were 13 years old or younger when they took the SAT as junior high school students. Data are reported on student demography, self-reported comparisons with peers, motivation for taking the SAT, invitations to and participation in talent search activities, and student and parent attitudes toward the experience. Students and their parents evaluated the experience of taking the SAT positively. Survey II analyzed test scores and other information for over 44,000 1980-81 test-takers (under 14 years old when they took the SAT) to examine their results through 1985-86, the year these students completed high school. Most of the data were taken from 30,000 students who were traced into high school. This longitudinal study provides data on testing history of the sample, the talent search students, and college-bound seniors. Thirty data tables are included. The student and parent questionnaires for Survey I are appended. (TJH)

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College Board Report

No. 88-1

Young SAT®-Takers: Two Surveys

Survey I: Young SAT-Takers and Their Parents

Gita Wilder
Patricia Lund Casserly

Survey II: Test-Taking History for 1980–81 Young SAT-Takers

Nancy W. Burton

Young SAT®-Takers: Two Surveys

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College Entrance Examination Board, New York, 1988

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FOREWORD

Since 1972, seventh and eighth graders have taken the Scholastic Aptitude Test (SAT) for the purpose of participating in regional talent search programs offering a variety of voluntary opportunities for advanced study and enrichment in academic subjects. In 1986–87 over 95,000 junior high school students took the SAT. As the number of seventh- and eighth-grade students taking the SAT has increased, various educational issues have been addressed by College Board councils and advisory committees and at College Board regional assembly meetings around the country. The research results reported here are a product of the Board's continuing interest in these issues and this use of the SAT.

Nationally over 30 different talent search programs offer a broad range of academic opportunities for students identified as precocious. Middle-school personnel initially identify students for participation in these programs, using guidelines provided by the sponsors. Usually students are eligible to participate in a talent search program if they have scored in the top 2 percent to 4 percent on a nationally normed standardized aptitude or achievement test measuring mathematical and verbal abilities. (The Metropolitan Achievement Tests [MAT], the Iowa Tests of Basic Skills [ITBS], and the Comprehensive Tests of Basic Skills [CTBS] are most commonly used.) These students are invited to apply to the talent search program and are requested to take the SAT in December or January. After examining the students' credentials (including their SAT results), the talent search program administrators commend students for their performance and offer advice for their continued academic enrichment or advanced study, including special courses designed specifically for precocious students.

Survey I in this report, "Young SAT-Takers and Their Parents" (Wilder and Casserly), reports on students 13 years or younger who tested in January 1984 and on their parents. This survey, conducted at the direction of the College Board's Council on Entrance Services, is an attempt to understand better the impact of this early testing experience on young test-takers and the students' experiences with the talent search programs. Survey II, "Test-Taking History for 1980–81 Young SAT-Takers" (Burton), looks at test scores and other information for over 44,000 test-takers who were under 14 years of age when they took the SAT in 1980–81 and examines their test results through 1985–86, the year these same students were completing high school. Together, Surveys I and II provide a systematic appraisal of this early testing phenomenon.

While the College Board recognizes the acknowledges the important research that undergirds the choice of the SAT as an appropriate assessment of academic ability for these precocious students, its position regarding these programs must remain neutral. This is consistent with its policy of open test centers and its longstanding position that test-takers should not be required to present credentials or to certify that academic prerequisites have been met before they take a test. (A student does not have to certify that he or she has taken an Advanced Placement course in order to take an Advanced Placement Examination, nor is it necessary for a student to have taken a chemistry course before taking the Chemistry Achievement Test.) Through its councils and advisory committees as well as its regional membership structure, the College Board will continue to address the important issues surrounding the testing experiences of these young students by providing the forum for an ongoing dialogue between the various audiences involved and concerned: the talent search agencies, the schools that nominate students for participation in these programs, the students, their parents, and the secondary schools in which they later enroll. It is hoped that these research results will serve to enrich these discussions.

Theresa Anne Novak

Survey I: Young SAT-Takers and Their Parents

Gita Wilder and Patricia Lund Casserly

In 1972, when Julian Stanley initiated the Study of Mathematically Precocious Youth (SMPY) at Johns Hopkins University, he used SAT-mathematical scores as one of the criteria for identifying the young mathematically gifted students with whom he worked. These students were typically 10 to 13 years old, four or more years younger than the high school seniors for whom the SAT was designed. Some years later SMPY became the Center for the Advancement of Academically Talented Youth (CTY), which continued its work with mathematically gifted students but broadened its focus to include giftedness in other academic areas as well. During this time the geographic area and the number of potential students served by CTY expanded dramatically. During the same period other universities established talent searches to serve young gifted students in other regions of the country.

By 1984 CTY had been joined by major interstate talent searches at Duke University, Northwestern University, Arizona State University, and the University of Denver as well as by several intrastate organizations dedicated to identifying and serving young people having a variety of academic gifts. (With increasing frequency there is overlap between inter- and intrastate efforts.) In 1972 a few thousand youngsters of 13 and younger took the SAT. By 1985 this number had increased to over 80,000. So that something could be learned about this growing population of students, a survey was designed to capture a range of information about them including, among other data, who they are, why they took the SAT, what happened to them after they took the test, and how they evaluated the experience of taking the test. (The questionnaires addressed to both students and parents are duplicated at the end of Survey I.)

THE POPULATION AND THE SAMPLE

From the January 1984 test administration, 62,876 students were identified who fulfilled the criteria for inclusion in the study: they were born in 1970 or later (i.e., they were 13 or younger when they took the test), and they had designated one of seven major national or regional talent searches to receive their scores. A sample of students was drawn from the population to receive questionnaires. The sample was stratified by sex, because there have traditionally been differences between males and females in the test scores, and by talent search, because the talent searches have differing selection policies that might well affect participation rates. The distribution of test scores by sex and by talent search is given in Table 1 for all students who were eligible for inclusion in the survey.[1] A total of 2,672 students were selected randomly—167 from each of 16 strata (males from Talent Search A, females from Talent Search A, males from Talent Search B, etc.). These students and their parents were sent questionnaires in May 1985.

Of the 2,672 students who were sent questionnaires, 1,846 returned them, a 69 percent response rate. A comparable number of parents returned the questionnaires. There were 1,606 matches among the returns—i.e., student and parent questionnaires from the same household. This means that for 60 percent of the original sample, it is possible to examine student and parent responses from the same household.

In most respects the respondent sample is enough like the selected sample to eliminate any concern about bias. All the talent searches are well represented, and score distributions are similar for the selected and the respondent samples. There are somewhat more girls than boys in both the respondent sample and the original population, although the selected sample had equal numbers. The response rate by talent search and sex is shown in Table 2. Table 3 contains the test scores of the original sample and the respondents (called "population" and "sample" in the table). In Table 3 the respondents (sample) are shown to be somewhat more able than the original sample (population) in terms of test scores. This slight bias is consistent with a general phenomenon of survey research in which brighter, more highly motivated individuals are more likely to respond.

Characteristics of the total group of students who took the SAT at age 13 or younger and sent scores to one of the major national or regional talent search programs were displayed above in Table 1. There are somewhat more girls than boys in the group. As might be expected, the averages of test scores for the talent search group are lower than the averages for college-

1. There are eight strata in the study, representing students who had sent test scores to the seven major talent searches and a group who did not designate a talent search but instead used a general purpose code or were assigned this code because they hadn't designated a talent search.

Table 1. Total Numbers of Students and Mean SAT Scores by Talent Search and Sex: January 1984 Administration

Talent Search	Number			SAT-Mathematical			SAT-Verbal		
	Total	M	F	Total	M	F	Total	M	F
A	17,086	8,612	8,474	393	411	375	355	358	353
B	2,602	1,263	1,339	447	466	429	400	400	399
C	9,394	4,582	4,812	416	437	396	368	371	365
D	2,214	1,108	1,106	409	425	393	373	375	371
E	16,434	7,816	8,618	374	393	360	349	353	345
F	12,049	6,018	6,031	400	417	382	362	362	361
G	3,097	1,503	1,594	367	384	354	333	337	329
Total	62,876	30,902	31,974	395	413	377	358	361	356
Percentage		49.2%	50.8%						
National college-bound seniors (1984)		48.0%	52.0%	471	495	449	426	433	420

*The letters purposely do *not* follow the order in which talent searches are listed to avoid identification of specific talent searches. The full names of the searches on which this study is based are as follows: Midwest Talent Search at Northwestern University; ROGATE: Program for the Study of Academic Precocity at Arizona State University; Rocky Mountain Talent Search at University of Denver; Talent Identification Program at Duke University; Center for the Advancement of Academically Talented Youth at Johns Hopkins University; University of Minnesota Talent Search. In this and future tables talent searches will be referred to by letter only.

Table 2. Response Rate by Talent Search and Sex (167 per Cell; Sample N = 2,672)

Talent Search	Male		Female		Total	
	N	%	N	%	N	%
A	106	63.5	129	77.2	235	70.3
B	114	68.3	117	70.1	231	69.2
C	125	74.9	120	71.9	245	73.4
D	114	68.3	129	77.2	243	72.8
E	107	64.1	124	74.2	231	69.2
F	118	70.7	113	67.7	231	69.2
G	108	64.7	119	71.3	227	68.0
H*	99	57.5	104	61.1	203	59.3

*H = the general purpose code used for students who did not designate one of the talent searches A through G.

Table 3. Mean SAT Scores by Talent Search (Population and Sample)

Talent Search	SAT-Verbal		SAT-Mathematical	
	Population	Sample	Population	Sample
A	400	396	447	450
B	372	365	413	406
C	368	376	416	422
D	373	375	409	411
E	349	354	374	375
F	355	357	393	397
G	362	365	400	406
H	333	343	369	371
Total	358	367	395	406

bound seniors. Substantial differences in the numbers of students sending scores to each of the talent searches reflect differences in the talent searches' areas of coverage. Because only about 25 percent of the talent search hopefuls provided the information requested of registrants in the Student Descriptive Questionnaire (SDQ), distributions by ethnic origin and grade are available only for the survey respondents. These data appear in Table 4, along with a breakdown by gender, which *is* available for the population; the respondent group is like the total group in terms of sex (more girls than boys). Also shown in Table 4 is that at the time of the survey in May 1985, respondents were most commonly (55 percent) eighth graders, with a sizable proportion (33 percent) of ninth graders. This means that the majority were seventh graders when they took the test. With respect to ethnic origin, the sample is overwhelmingly (90 percent) white. The next-largest ethnic concentration is of Asian Americans, who represent 4 percent of the young SAT-takers. Blacks constitute fewer than 2 percent of the sample and Hispanics about 1 percent. The ethnic distribution by talent search (Table 5) shows that the talent searches differ in their ability to attract nonwhite students, most likely because of regional differences in the concentrations of such students.

Overall, the respondent sample is representative of the total group of young test-takers in terms of sex, test scores, and distribution among the talent searches. Since information about ethnic origin and grade in

Table 4. Characteristics of Survey Participants

Ethnic Group	*N*	*%*
American Indian	7	0.4
Asian American	72	3.9
Black	33	1.8
Hispanic	20	1.1
White	1,662	90.0
Other	23	1.2
Not available	29	1.6
Sex		
Male	889	48.2
Female	957	51.8
*Grade**		
7th	29	1.6
8th	1,011	54.8
9th	608	32.9
10th or higher	182	9.9
Not available	16	0.9

*These distributions represent the grade the students were in when they completed the questionnaire in May 1985. Presumably they were in the next lower grade when they took the test.

Table 5. Ethnic Distribution of Survey Participants by Talent Search

Talent Search	*White (%)*	*Black (%)*	*Asian American (%)*	*Hispanic (%)*	*American Indian (%)*
A	95.7	0.0	2.6	0.4	0.0
B	93.0	1.8	3.5	0.4	0.0
C	83.9	1.3	8.9	2.5	1.7
D	91.6	1.3	2.1	1.7	0.4
E	96.1	2.2	0.9	0.0	0.0
F	89.1	3.5	5.3	1.3	0.0
G	90.1	4.1	3.2	1.4	0.5
H	92.9	0.5	5.1	0.5	0.5

school are available only for the respondents, it is difficult to know how the respondents compare with the total group along these dimensions.

The sample of students represented by the findings reported here is not, of course, typical of all gifted and talented students, nor is it representative of all the students who were invited to take the SAT. There is no way to give more than a gross estimate of the numbers of students who may have been offered the opportunity to take the test, and no way to assess how the students who took the test differ from those who decided not to. The ideal study would have started at the school level, examining the characteristics of the invited students and comparing these with the characteristics of the students described here. While the students (and their parents) who returned questionnaires are reasonably representative of the entire population of students (and parents of students) who took the SAT when they were 13 or younger, the population of invitees is not reflected in these results. It would be valuable to know if there are systematic differences suggesting important reasons why some invited students and not others decide to take the SAT.

WHO ARE THE YOUNG TEST-TAKERS?

Some of the characteristics of young test-takers have already been presented in the interests of comparing the population and the sample (see Tables 1 to 5). There are slightly more females than males; the students typically take the test when they are in the seventh grade (although about a third did so as eighth graders), and they are largely white.

Half of them are firstborns. Their parents are highly educated: 33 percent of their fathers and 20 percent of their mothers had some education past the bachelor's degree, and 65 percent of their fathers and 52 percent of their mothers attained at least a bachelor's degree. (In comparison, a nationally representative sample of white eighth graders surveyed as part of the National Assessment of Educational Progress [NAEP] reported that 33 percent of their fathers and 25 percent of their mothers had at least graduated from college.) Fewer than 10 percent live in large cities; the largest single group (31 percent) live in the suburbs.

Even at 14, the age at which most student respondents completed the questionnaire, the aspirations of the young SAT-takers are high: 94 percent expect to go to college, 93 percent expect to graduate from college, and 43 percent expect to attend graduate or professional school. Their parents have even higher hopes for them: 56 percent expect their children to attend graduate or professional school. There is a high degree of agreement between the judgments of parents and children about the children's abilities in relation to others of their age (see Tables 6 and 7). When large disparities arise (over 5 percentage points), the parents always rate their children's abilities higher than the children rate themselves. These disparities are highest in creative writing ability, ability to organize work, and scientific ability. When children were asked in separate questions about their reading ability, 61 percent placed themselves in the highest category. But only about 30 percent placed themselves in the highest category in writing ability.

Compared with the NAEP sample of white eighth graders, referred to above, young SAT-takers spend more time doing homework (one to two hours a night on average compared with less than an hour for the NAEP sample) and less time watching television (between one and two hours a night on average compared with between two and three hours for the NAEP sample). About 85 percent report getting mostly A's or mostly A's and B's in school. Close to 5 percent had skipped a grade. Just under 32 percent had finished a course or a series of courses in less than the required

Table 6. Students' Self-Reported Comparisons with Peers

"How do you feel you compare with other people your own age in each of the following areas of ability?"

	I am better than most people my age (%)	*I am about the same as most people my age (%)*	*I am worse than most people my age (%)*
Acting ability	28.4	48.9	8.4
Artistic ability	28.7	46.0	21.4
Athletic ability	35.8	46.3	16.2
Creative writing	49.0	41.8	6.3
Leadership ability	46.9	44.3	4.9
Mathematical ability	71.1	25.1	3.2
Musical ability	43.0	34.3	17.6
Ability to organize my work	47.7	42.7	8.1
Scientific ability	47.5	42.9	5.9
Public speaking ability	35.2	44.8	15.0

Table 7. Parents' Comparison of Their Children with Peers

"How do you feel your child compares with others of his/her own age in each of the following areas of ability?"

	Child is better than most people his/her age (%)	*Child is about the same as most people his/her age (%)*	*Child is worse than most people his/her age (%)*
Acting ability	28.9	51.3	5.4
Artistic ability	37.4	50.6	8.4
Athletic ability	35.5	47.1	15.3
Creative writing	65.0	29.6	2.2
Leadership ability	53.2	39.4	3.5
Mathematical ability	77.3	20.4	1.3
Musical ability	43.8	41.6	10.0
Ability to organize his/her work	57.9	32.3	7.8
Scientific ability	60.2	34.9	1.8
Public speaking ability	39.4	47.4	6.1

time. A large majority (78 percent) had taken advanced or honors courses in their school, and about 16 percent had taken such courses at a school other than the one they regularly attend. Ten percent report having already taken an Advanced Placement Examination.

Just over a third of the young SAT-takers had studied algebra when they took the SAT, with no substantial differences between male and female students in this respect. (It is interesting to note that like the majority of SAT-takers, who are juniors and seniors in high school, males outscored females in both the verbal and the mathematical sections of the test. The differences in the mathematical scores of the 13-year-olds do not appear to be related to differences in the number of males and females who have taken algebra. The correlates of sex differences in this population will be the focus of future analyses of the survey data.)

In short, the 13-year-old SAT-takers appear to be younger (and perhaps superior) versions of the larger SAT-taking population. They are already planning for college and beyond, have high grades in school, and are conscientious about their schoolwork. Their parents are better educated than are the parents of a nationally representative group of eighth graders and, in turn, have high aspirations for their children.

WHY DO STUDENTS TAKE THE TEST?

The invitation to take the SAT in order to qualify for participation in an activity sponsored by a talent search is most commonly tendered by the school the student attends. Typically, students are invited by virtue of their performance on the standardized tests used by the schools. A score at the 95th or 97th percentile is the usual criterion. The school sends a notice home with the student (more than 80 percent of the parents in the survey learned about the invitation in this way), with or without descriptive information supplied by the talent search. Most parents (82 percent) believed they had been at least adequately informed about the test.

Both students and parents were asked why the students took the test and who encouraged them to do so. Ostensibly these young test-takers were invited, by virtue of outstanding academic performance reflected in high scores on the standardized tests given by their schools, to take the SAT to qualify for one or another of the major national or regional talent searches. In fact, that was *not* the reason most frequently chosen by students or their parents (Table 8). Perhaps it was taken for granted, because all but a fraction of the students surveyed had had their scores sent to talent searches. In Table 8 the responses of students and parents to the "why" question indicate that by far the most common reason for taking the test is to see what it is like. Although 25 percent of the students and 38 percent of the parents recognize that one reason is for the student to qualify for special programs, both groups of respondents are more likely to select the test-taking experience. "To see what it was like" was checked by 76 percent of the students. "As practice for college entrance examinations" was checked by 69 percent of the parents.

The second most frequent reason for taking the test, cited by 61 percent of the students, was "It was encouraged by my school." The next most frequent reason, chosen by 57 percent of the students, was that "My parents wanted me to take it." Interestingly, parents saw the decision to take the test a bit differently than

Table 8. Reasons for Taking the SAT

Students: "Why did you take the SAT?" (Circle all that apply)

	N	%
It was encouraged by my school	1,118	60.6
My parents wanted me to take it	1,054	57.1
My friends were doing it	353	19.1
To qualify for special programs	466	25.2
To see what it was like	1,406	76.2
Another reason	219	11.9

Parents: "Why did you want your child to take the SAT?" (Circle all that apply)

	N	%
The school encouraged it	873	45.2
He/she wanted to take it	1,205	62.4
His/her friends were doing it	187	9.7
To qualify for special programs	736	38.1
As practice for college entrance examinations	1,322	68.5
Another reason	158	8.2

their offspring. Sixty-two percent of them reported that "He/she wanted to take it." And only 45 percent reported that "the school encouraged it."

When asked who encouraged them to take the test, 78 percent of the students identified their parents. Teachers and counselors were much less influential and were identified, respectively, by 36 percent and 34 percent of the students; only about 20 percent reported having been encouraged by friends.

Most of the students prepared themselves for the test in some way; only about 15 percent did nothing to prepare. About two-thirds reported reading the SAT *Student Bulletin*, and an equal number reported reading *Taking the SAT*. More than half the parents said they read through these publications with their children. Fewer than 2 percent of the students had taken a commercial test preparation course, and only 7 percent reported taking a test preparation class or series of classes in school. Most students (68 percent) said that no one had helped them prepare for the test; among those who were helped, parents were the most common source of such help.

In short, encouragement and support for 13-year-olds who take the SAT is most likely to come from their parents. Parents and students alike most frequently identify the experience of taking the test as a reason for taking it.

WHAT HAPPENS TO STUDENTS WHO TAKE THE TEST?

Just over half (53 percent) of the students and slightly more (60 percent) of their parents report that the student was invited to participate in one or more activities sponsored by a talent search (see Table 9). In view of the various talent searches' published selection procedures, this obtained estimate seems high. Although the sample of respondents is generally slightly biased to reflect the more able students among those surveyed, the magnitude of the bias is not such as to account for the large difference between those who report being invited and the percentage that might be expected to be invited on the basis of selection criteria. Many talent searches, however, send newsletters and other printed materials to more students than qualify for awards and the most selective special programs. It is possible that the students who report invitations to participate in talent search activities include some who simply receive mailings from the talent searches. About half the students reported that they were receiving newsletters or other mailings from talent searches at the time they completed the questionnaire.

Students were asked what, specifically, they had been invited to do on the strength of their SAT scores, although it is not known for sure that the invitations were because of SAT scores. The most frequent response (from about 47 percent of the students) was that they had been asked to participate in a summer program at a college or university; 18 percent identified a weekend program at a college or university; and 15 percent indicated an advanced course or an accelerated program at their own schools. Smaller proportions said that they had been invited to take part in enrichment activities at their schools (10 percent), a regular college course at a local institution (7 percent), and a correspondence course (5 percent).

The percentage of students reported to have actually taken part in any activity of a talent search was much smaller than the reported percentage of invitees—at

Table 9. Invitations to Participate in Talent Search Activity

Students: "Were you invited to participate in any activities sponsored by a talent search?"

	N	%
Yes	986	53.4
No	615	33.3
I don't know or don't remember	219	11.9
Not available	26	1.4

Parents: "Was your child invited to participate in any activities sponsored by a talent search?"

	N	%
Yes	1,154	59.8
No	630	32.6
I don't know or don't remember	133	6.9
Not available	14	0.7

Table 10. Actual Participation in Talent Search Activities (Parents' Responses)

"Did your child actually participate in any activities sponsored by a talent search?"

	N	%
No	1,568	81.2
Yes	338	17.5
Not available	25	1.3

least according to parents, whose responses were considered more reliable indicators (see Table 10). Only about 18 percent of the parents reported that their children took part in any such activity.

Of the activities actually undertaken, 10 percent of the parent respondents reported a summer program for gifted students at a college or university as the most common (see Table 11). Students, on the other hand, reported school-based activities as the most frequent: an advanced course or an accelerated program (25 percent) and enrichment activities (14 percent). About 7 percent of the parents reported that their children took an advanced course or an accelerated program at their own schools, 6 percent a special course at a local college or university, and 5 percent enrichment activities at their own schools. Since these activities were not mutually exclusive, it is possible that some students took part in several or even all of them. Whether students' participation in school-based activities came about because of their SAT scores is not possible to tell from the ambiguous way in which the question was asked (see the student questionnaire at the end of Survey I). Nine percent of the students reported attending a summer college or university program. Few students took advantage of any of the remaining options listed.

When asked why they had declined, if they had been invited to participate in one or more talent search activities but did not do so, students were most likely (28 percent) to say that the activity conflicted with other activities they preferred (Table 12). A relatively large number also cited cost (26 percent) and distance (22 percent) as factors. For parents, cost and distance were the most commonly cited reasons (29 percent each) for their children's opting not to take part in a talent search activity. Conflicts with preferred activities were cited by 23 percent of the parents.

Nineteen percent of the students reported receiving certificates at a ceremony held someplace other than their schools by virtue of their SAT scores. An equal number reported having been honored at their schools for taking the test, and about 7 percent were honored at school because of their SAT scores. Parents' responses to these questions were similar to those of students, except that greater numbers of parents than students reported students' participation in each of the activities.

From the questionnaire results it is difficult to assess the schools' responses to these students' SAT experience. As stated above, about 25 percent of the students reported involvement in advanced courses or accelerated programs at their schools, and 14 percent reported participation in enrichment activities. It is possible that these opportunities were, or would have been, available to students whether or not they had taken the SAT. We have seen that only a small number (7 percent) of the students reported any direct recognition by their schools of their SAT performance; at the same time 19 percent reported having been honored by their schools because they took the test. Any determination of junior high schools' reactions to the SAT experience must be made on the basis of information gathered directly from the schools.

HOW DO STUDENTS AND PARENTS EVALUATE THE EXPERIENCE?

Students and parents alike perceive the experience of taking the SAT as beneficial for the most part. Responses of both students and parents to the question of perceived benefit appear in Table 13. These responses are overwhelmingly positive: about 79 percent of the students judged the experience to be somewhat or much more positive than negative, and 77 percent of the parents judged the experience to be somewhat or

Table 11. Talent Search Activities Reported by Parents and Students

	Parents		*Students*	
	N	%	*N*	%
Advanced course or accelerated program at his/her school	127	6.6	466	25.2
Enrichment activities at his/her school	96	5.0	258	14.0
Special course at a local college or university	111	5.7	78	4.2
Regular course at a local college or university	14	0.7	20	1.1
Weekend program for gifted students at a college or university	33	1.7	31	1.7
Summer program for gifted students at a college or university	200	10.4	166	9.0
Course by mail	10	0.5	6	0.3
Something else	39	2.0	121	6.6

Table 12. Reasons for Declining Invitation to Participate in Talent Search Activities

Parents: "If your child was invited to participate in any of the activities associated with a talent search but turned down one or more, why did (s)he turn it (them) down?"

	N	%
(S)he was not invited to participate in any activities	372	19.3
(S)he did not turn down any activities in which (s)he was invited to participate	64	3.3
It (they) was (were) too expensive	560	29.0
It (they) was (were) too far from our home	568	29.4
It (they) would have taken up too much time	183	9.3
It (they) conflicted with other activities my child preferred	447	23.1
Some other reason	106	5.5

Students: "If you were invited to participate in any of the activities associated with a talent search but turned down one or more, why did you turn it (them) down?"

	N	%
I was not invited to participate in any activities	384	20.8
I did not turn down any activities in which I was invited to participate	53	2.9
It (they) was (were) too expensive	483	26.2
It (they) was (were) too far from my home	413	22.4
It (they) would have taken up too much time	297	16.1
It (they) conflicted with other activities I preferred	509	27.6
Some other reason	134	7.3

Table 13. Evaluation of the Experience of Taking the SAT

Students: "On balance, how would you evaluate the experience of taking the SAT?"

	N	%
Much more positive than negative	903	48.9
Somewhat more positive than negative	553	30.0
Neither positive nor negative	313	17.0
Somewhat more negative than positive	35	1.9
Much more negative than positive	14	0.8

Parents: "On balance, how beneficial do you think the SAT was to your child?"

	N	%
Much more beneficial than harmful	915	47.4
Somewhat more beneficial than harmful	571	29.6
Neither beneficial nor harmful	375	19.4
Somewhat more harmful than beneficial	42	2.2
Much more harmful than beneficial	1	0.1

Table 14. Parents' Responses to Their Child's Taking the SAT

"Did your child's SAT scores surprise you?"

No	68.1 %
Yes, higher than expected	19.5
Yes, lower than expected	12.4

"Did your child's SAT scores change your view of his/her academic capabilities?"

No	93.1 %
Yes	6.9

"Do you feel that the experience of taking the SAT (and the aftermath of the test) changed your child in any significant way?"

No	75.9 %
Yes	24.1

much more beneficial than harmful. Very small percentages (3 and 2, respectively) judged the experience somewhat or much more negative than positive and somewhat or much more harmful than beneficial. Viewed in the light of the percentages of students who were offered opportunities for special programs, the results are surprising. More students thought the test-taking experience positive than were invited to take part in special programs (Table 9). *Many* more students thought the test-taking experience positive than actually took part in special programs (Table 10). Viewed in light of the original expressed reasons for taking the test, however, the results are not so surprising. Since most of the students reported taking the SAT to see what is was like, simply having taken the test fulfilled their expectations. Moreover, about half the students, asked how they felt about being invited to take the test, identified pride as their strongest reaction. Perhaps the prestige of being invited to take the test and the experience of having taken it are sufficient to confer the benefit level reported by students and parents. It is also possible that there are school-based benefits not addressed in the questionnaires and therefore not reflected anywhere but in the respondents' perceptions of benefit.

Although 68 percent of the parents were not surprised by their child's SAT scores, about 20 percent reported that their child's scores were higher than expected and about 12 percent reported they were lower than expected (Table 14). Even so, 93 percent said their child's scores did not change the parents' views of his or her academic capabilities. And about 76 percent believed that the experience of taking the SAT (and the aftermath of the test) had not changed their child in any significant way.

Table 15. Parents' Report on Changes in Their Child after Taking the SAT

"In which of the following ways did the experience change him/her?"	
Increased his/her interest in school	16.7 %
Expanded his/her thinking about careers	29.5
Expanded his/her thinking about college	39.2
Caused him/her to alter his/her school curriculum	7.2
Increased his/her range of activities in school	8.6
Increased his/her range of activities outside of school	5.2
Increased his/her circle of friends	6.2
Expanded his/her interests	16.7
Expanded his/her educational opportunities	29.0

Yet, when parents were asked to identify the ways in which the child had changed as a result of the experience in another, sequent question, more than 39 percent of the parents thought it had expanded their child's thinking about college (Table 15). About 30 percent said the child's thinking about careers had expanded, and 29 percent thought educational opportunities had increased for their child. This anomaly demonstrates that, in survey research at least, a straightforward question requiring no more than a yes or no answer (as in Table 14) may unduly restrict responses, lead to false conclusions, or both.

SUMMARY

This survey of young SAT-takers and their parents collected information about a sample of students who took the SAT as junior high school students in January 1984. Compared with the college-bound seniors who took the test in 1984, the young test-takers are less representative of the diversity of the United States population: 90 percent are white, and there are proportionately fewer minority test-takers from each of the major groups for which data are routinely reported. The young test-takers were invited to take the SAT mainly through invitations tendered by the schools; their parents, however, provided the greatest encouragement for them to take the test. Most students prepared by reading the SAT descriptive booklets and taking the sample test therein. Few students took formal preparation classes or courses.

Asked why they took the test, most students said, "To see what it was like." Other frequently expressed reasons were that their parents wanted them to take it and that the school encouraged it.

More than half the students reported being invited to participate in one or another of the activities sponsored by a talent search, most commonly a summer course on a college or university campus. Only about 10 percent of the students actually participated in such a summer course, according to parents, and even smaller proportions of students reported taking part in other talent search activities. Conflicts with preferred activities, distance from home, and cost were the major reasons students and parents gave for nonparticipation.

Students and parents alike evaluated the experience of taking the test positively, a somewhat surprising finding given the small number of students who actually took part in talent search programs. It was reasoned that the prestige of being asked to take the test, combined with the satisfaction of curiosity, was enough to confer the benefit level reported. At the same time it is possible that there were benefits not covered in the questionnaires, which may be the subject of future investigations into the experiences of academically talented students.

Taking the SAT

A National *Survey of Young SAT-Takers*

The purpose of this survey is to learn about students who take the SAT when they are 13 or 14. Please answer all of the questions. Your responses will be confidential.

There are four parts to the questionnaire. The first asks about your experiences taking the SAT and receiving your score report. The second is about what happened to you after you took the test. The third is about your experiences at home and at school, and the fourth asks about you. The questionnaire should take you no more than twenty minutes to complete.

Return the questionnaire in the postage-paid envelope that is enclosed. Your responses will help us to improve our services to other students like yourself.

Thank you.

I. This section of the questionnaire is about your experiences taking the SAT in January 1984.

1. Did you take the SAT for the first time in January 1984?

A Yes

B No (When did you take it before January 1984?) _____

2. Why did you take the SAT? (Circle all that apply)

A It was encouraged by my school

B My parents wanted me to take it

C My friends were doing it

D To qualify for special programs

E To see what it was like

F Another reason (What is it?) _____

3. Who encouraged you to take the SAT? (Circle all that apply)

A My friends

B A teacher

C A counselor

D My parents

E Someone else (Who?) _____

F No one

4. Which of the following best describes how you felt when you were first asked to take the SAT? (Circle one)

A Proud

B Nervous

C Uncertain

D Annoyed

E Some other way (How?) _____

5. How many of your friends took the SAT when you did?

A Most of them

B A few of them

C Only one friend

D None of my friends

E I don't know

6. What did you do to prepare for the test? (Circle all that apply)

A Nothing

B Read through the SAT Student Bulletin

C Read through *Taking the SAT*

D Took the full length sample test in *Taking the SAT*

E Took a class or series of test preparation classes in school

F Took a test preparation course outside of school (e.g. Stanley Kaplan)

G Read a test preparation book (e.g. 10 SATs, Barron's, Peterson's)

H Something else (What?) _____

7. Had you studied algebra when you took the SAT in January 1984?

A No

B Yes, I had taken or was taking an algebra course in school

C Yes, I had taken or was taking an algebra course outside of school

D Yes, I learned algebra in some other way (How?)

_____

8. Did any of the following people help you prepare for the test? (Circle all that apply)

A No one helped me

B A counselor

C A teacher

D A parent

E A brother or sister

F A friend

G Someone else (Who?)

_____

9. How difficult did you find the test?

A More difficult than I expected

B About what I expected

C Easier than I expected

D I don't remember

10. How well prepared did you feel when you took the test in January 1984?

A Very well prepared

B Moderately well prepared

C Not at all prepared

D I don't remember

12

11. How satisfied were you with your test scores when you received them?

A Very satisfied

B Moderately satisfied

C Not at all satisfied

12. Did any of the following people see your score report? (Circle all that apply)

A Your parents

B Your brother(s) or sister(s)

C Your friends

D Your teacher(s)

E A counselor at your school

F Someone else at your school (Who?) _____

G Someone from a talent search

H Someone else (Who?) _____

13. Did any of the following people discuss your score report with you? (Circle all that apply)

A Your parents

B Your brother(s) or sister(s)

C Your friends

D Your teacher(s)

E A counselor at your school

F Someone else at your school? (Who?) _____

G Someone from a talent search

H Someone else (Who?) _____

14. Have you taken any of the following examinations? (Circle all that apply)

A The Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test (PSAT/NMSQT)

B College Board Achievement Tests in one or more subjects

C ACT

D Advanced Placement (AP) Tests in one or more subjects

15. Were there any incidents at the test center or connected with registering for the test or receiving your test scores that you would like ETS and The College Board to know about?

A No

B Yes, Explain: _____

13

II. This section of the questionnaire is about things that may or may not have happened to you after you took the SAT in January 1984.

1. Were you invited to participate in any activities sponsored by a talent search?

   A Yes
   B No
   C I don't know or don't remember

2. Were you invited to do any of the following things because of your SAT score? (Circle all that apply)

   A Take an advanced course or accelerated program at your school
   B Take part in enrichment activities at your school
   C Take a special course at a local college or university
   D Take a regular college course at a local college or university
   E Attend a weekend program for gifted students at a college or university
   F Attend a summer program for gifted students at at college or university
   G Take a course by mail
   H Other (What?) _____

3. Did you actually do any of the following things? (Circle all that apply)

   A Take an advanced course or accelerated program at your school
   B Take part in enrichment activities at your school
   C Take a special course at a local college or university
   D Take a regular college course at a local college or university
   E Attend a weekend program for gifted students at a college or university
   F Attend a summer program for gifted students at at college or university
   G Take a course by mail
   H Other (What?) _____

4. Were any of the activities you circled in Questions 2 and 3 associated with a talent search?

A Yes - If yes, with which talent search?

(1) Center for Talented Youth (CTY) - Johns Hopkins University
(2) Midwest Talent Search - Northwestern University
(3) Project for the Study of Academic Precocity (PSAP) - Arizona State University
(4) ROGATE
(5) Rocky Mountain Talent Search - University of Denver
(6) Talent Identification Program (TIP) - Duke University
(7) Other (What?) _____

B No

C I don't know

5. If you were invited to participate in any of the activities associated with a talent search, but turned down one or more, why did you turn it (them) down?

A I was not invited to participate in any activities

B I did not turn down any activities in which I was invited to participate

C It (they) was (were) too expensive

D It (they) was (were) too far from my home

E It (they) would have taken up too much time

F It (they) conflicted with other activities that I prefer

G Some other reason (What?) _____

6. Do you receive a newsletter or notices of programs or other mailings from a talent search?

A Yes
B No
C I don't know or don't remember

7. Were you honored at your school at a special assembly ceremony because you...

		Yes	No	Don't know
A	...took the SAT?	A	B	C
B	...earned a certain score on the SAT?	A	B	C

8. Did you receive a special certificate at a ceremony somewhere other than your school because of your score on the SAT?

A Yes
B No
C I don't know or don't remember

9. Have your parents been invited to take part in any special activities because you took the SAT?

A Yes
B No
C I don't know

10. Did taking the SAT and receiving your scores cause you to alter your choice of courses to take in school?

A Yes
B No
C I'm not sure

11. On balance, how would you evaluate the experience of taking the SAT?

A Much more positive than negative
B Somewhat more positive than negative
C Neither positive nor negative
D Somewhat more negative than positive
E Much more negative than positive

Comments: _____

_____

III. This section of the questionnaire is about things you do at home and at school, and about your plans for the future.

1. Which of the following best describes your grades at school?

A Mostly A's
B Mostly A's and B's
C Mostly B's
D Mostly B's and C's
E Mostly C's
F Mostly D's
G Mostly F's

2. How much time do you usually spend each day on homework?

A No homework was assigned

B I had homework but didn't do it

C Less than 1 hour

D 1 to 2 hours

E 3 to 4 hours

F More than 4 hours

3. How much time do you usually spend each day practicing a sport or a musical instrument?

A None

B Less than 1 hour

C 1 to 2 hours

D 3 to 4 hours

E More than 4 hours

4. How much time do you usually spend each day working on a project or hobby of your own?

A None

B Less than 1 hour

C 1 to 2 hours

D 3 to 4 hours

E More than 4 hours

5. How much television do you usually watch each day?

A None

B 1 hour or less

C 2 hours

D 3 hours

E 4 hours

F 5 hours

G 6 hours or more

6. What kind of reader do you think you are?

A A poor reader

B A good reader

C A very good reader

D I don't know

7. What kind of writer do you think you are?

A A poor writer

B A good writer

C A very good writer

D I don't know

8. How do you feel you compare with other people your own age in each of the following areas of ability?

	I am better than most people my age	I am about the same as most people my age	I am worse than most people my age	I don't know
a. Acting ability.....	A	B	C	D
b. Artistic ability.....	A	B	C	D
c. Athletic ability.....	A	B	C	D
d. Creative writing.....	A	B	C	D
e. Leadership ability.....	A	B	C	D
f. Mathematical ability.....	A	B	C	D
g. Musical ability.....	A	B	C	D
h. Ability to organize my work.....	A	B	C	D
i. Scientific ability.....	A	B	C	D
j. Public speaking ability..	A	B	C	D

Look at the list again. In which area of ability do you think you are best?

_____

If there is a special ability that is not listed in which you excel, write it here:

_____

9. What are your MOST and LEAST favorite subjects in school? (Circle one in each column)

	Most	Least
a. Art.....	A	B
b. English Language Arts.....	A	B
c. Computers.....	A	B
d. Foreign Language.....	A	B
e. Gym.....	A	B
f. Mathematics.....	A	B
g. Music.....	A	B
h. Science.....	A	B
i. Other (What?) _____	A	B

Why? _____

10. On the average, how many hours per day do you spend doing chores at home?

A None

B Less than an hour

C 1 to 2 hours

D 3 hours or more

11. Have you read any of the following during the past week for your own interest or pleasure (not for school)? (Circle all that apply.)

A A magazine

B A newspaper

C A play

D A poem

E A story or novel

F A science book

G A social studies book

H A math book

I A workbook

J Something else (What was it?)

_____

_____

12. Have you participated in any of the following types of activities either in or out of school this year?

	Yes	No
a. Athletic teams	A	B
b. Cheerleaders or majorettes	A	B
c. Debating or drama	A	B
d. Band or orchestra	A	B
e. Chorus or dance	A	B
f. Hobby clubs like photography or crafts	A	B
g. Honor societies	A	B
h. Newspaper, magazine, or yearbook	A	B
i. Student government	A	B
j. Scouts or "Y" or other youth group	A	B
k. Church activities	A	B
l. Community service clubs or activities	A	B
m. Sororities or fraternities	A	B

13. Were you an officer in any of the above activities?

Which one(s)? _____

_____

14. How many days of school did you miss last month (or the last full month you were in school)?

A None

B 1 or 2 days

C 3 or 4 days

D 5 or 10 days

E More than 10 days

15. Have you ever done any of the following things?

	Yes	No
a. Skipped a grade in school.....	A	B
b. Finished a course or series of courses in less than the required time?.....	A	B
c. Taken an advanced, honors, or Advanced Placement course at your school?.....	A	B
d. Taken an advanced, honors, or Advanced Placement course at a school other than the one you regularly attend?.....	A	B

16. Do you expect to...

	Yes	No	I don't know
a. ...graduate from high school?.....	A	B	C
b. ...go to college?.....	A	B	C
c. ...graduate from college?.....	A	B	C
d. ...go to another school after college for graduate or professional training?.....	A	B	C

17. What do you plan to do when you leave high school? (Circle all that apply.)

A Get a job

B Attend a two-year college or university

C Attend a four-year college or university

D Enter some other kind of training (What?) _____

E Enter military service

F Something else (What?) _____

18. What kind of work do you think you want to do when you have finished your formal education?

_____

_____

_____

19. How important is each of the following to you in your life?

	Not Important	Somewhat Important	Very Important
a. Finding a job I can do well.....	A	B	C
b. Finding the right person to marry and having a happy family life.....	A	B	C
c. Having lots of money.....	A	B	C
d. Having strong relationships.....	A	B	C
e. Having job security.....	A	B	C
f. Being a leader in my community.....	A	B	C
g. Being able to give my children better opportunities than I've had.....	A	B	C
h. Living close to parents and relatives	A	B	C
i. Getting away from this area of the country.....	A	B	C
j. Working to correct social and economic inequities.....	A	B	C
k. Having children.....	A	B	C
l. Having leisure time to enjoy my own interests.....	A	B	C

IV. This section of the questionnaire is about you.

1. What is your sex?

A Female B Male

2. What is your racial/ethnic origin?

A American Indian/Pacific Islander

B Asian American

C Black

D Hispanic (e.g., Chicano, Puerto Rican, Cuban)

E White

F Other (What?) _____

3. What grade are you now in in school?

A Sixth or lower D Ninth

B Seventh E Tenth or above

C Eighth

4. In what grade were you when you took the SAT before January 1984 (or December 1983)?

A I didn't take the SAT before January 1984 (or December 1983)

B Sixth or lower

C Seventh

D Eighth

E Ninth

F Tenth or above

5. How far did your mother go in school?

A Eighth grade

B High school but didn't graduate

C Graduated from high school

D College but didn't graduate

E Graduated from college

F Went to another school after college

G I don't know

6. How far did your father go in school?

A Eighth grade

B High school but didn't graduate

C Graduated from high school

D College but didn't graduate

E Graduated from college

F Went to another school after college

G I don't know

7. How many brothers and sisters do you have who are older than you?

A None

B One

C Two

D Three

E Four

F Five

G Six

H Seven or more

8. How many brothers and sisters do you have who are younger than you?

A None
B One
C Two
D Three
E Four
F Five
G Six
H Seven or more

9. In what type of community do you live?

A A large city
B A small or medium-size city
C The suburb of a city
D A small town
E A rural area

We are interested in following up a small group of students who have taken the SAT when they were in the 7th or 8th grades. This follow-up might take the form of additional questionnaires and/or face-to-face interviews about your academic experiences. Would you be willing to participate in such a follow-up?

A Yes
B Maybe, but I need more information
C No

If you are willing to participate in a follow-up study, or would like more information about such a study, we will need your name and address. (Write them in the space below.) Even if you provide this information for further follow-up, please be assured that your name will not be associated with your responses in this questionnaire.

Name: _____

Address: _____
Street Address

_____
(City) (State) (Zip code)

Telephone: _____
(Area code)

Taking the SAT

A National Survey of Young SAT-Takers

Parent Questionnaire

The purpose of this survey is to learn about students who take the SAT when they are 13 or 14. Please answer all of the questions. Your responses will be confidential.

There are four parts to the questionnaire. The first asks about your child's experiences taking the SAT. The second is about what happened to your child after the test. The third is about his/her experiences at home, and the fourth asks about you.

Return the questionnaire in the postage-paid envelope that is enclosed. Your responses will help us to improve our services to other students.

Thank you.

SURVEY OF YOUNG SAT-TAKERS

PARENT QUESTIONNAIRE

I. This section of the questionnaire is about your child's experiences taking the SAT.

1. How did you learn about your child's invitation to take the SAT? (Circle all that apply)

   A In a notice from his/her school

   B From someone at his/her school, in a phone call or face-to-face conversation

   C From some other source (What is it?) _____

2. Why did you want your child to take the SAT? (Circle all that apply)

   A The school encouraged it

   B He/she wanted to take it

   C His/her friends were doing it

   D To qualify for special programs

   E As practice for college entrance examinations

   F Another reason (What is it?) _____

3. How well informed do you feel you were about the test?

   A Very well informed

   B Adequately informed

   C Not at all informed

4. What did you do to help your child prepare for the test?

A Nothing

B Read through the SAT Student Bulletin with him/her

C Read through Taking the SAT with him/her

D Enrolled him/her in a test preparation course

E Something else (What?) _____

5. How well prepared was your child when (s)he took the test in January 1984?

A Very well prepared

B Moderately well prepared

C Not at all prepared

D I don't remember

6. Were there any incidents at the test center or connected with registering for the test or receiving the test scores that you would like ETS and the College Board to know about?

A No

B Yes, explain: _____

_____

II. This section of the questionnaire is about things that may or may not have happened to your child after (s)he took the SAT in January 1984.

1. Was your child invited to participate in any activities sponsored by a talent search?

A Yes

B No

C I don't know or don't remember

2. Did your child actually participate in any activities sponsored by a talent search?

A No

B Yes

Which activities? (Circle all that apply)

(1) An advanced course or accelerated program at his/her school

(2) Enrichment activities at his/her school

(3) A special course at a local college or university

(4) A regular course at a local college or university

(5) A weekend program for gifted students at a college or university

(6) A summer program for gifted students at a college or university

(7) A course by mail

(8) Something else (What?) _____

3. Did your child take part in any of the above activities NOT sponsored by a talent search?

A No

B Yes

Which activities? (Circle all that apply)

(1) An advanced course or accelerated program at his/her school

(2) Enrichment activities at his/her school

(3) A special course at a local college or university

(4) A regular course at a local college or university

(5) A weekend program for gifted students at a college or university

(6) A summer program for gifted students at a college or university

(7) A course by mail

(8) Something else (What?) _____

4. If your child was invited to participate in any of the activities associated with a talent search but turned down one or more, why did (s)he turn it (them) down?

   A (S)he was not invited to participate in any activities

   B (S)he did not turn down any activities in which (s)he was invited to participate

   C It (they) was (were) too expensive

   D It (they) was (were) too far from our home

   E It (they) would have taken up too much time

   F It (they) conflicted with other activities my child prefers

   G Some other reason (What?) _____

5. Did your child's SAT scores surprise you?

   A No

   B They were higher than I expected

   C They were lower than I expected

6. Did your child's performance on the SAT cause you to change your view of his/her academic capabilities?

   A No

   B Yes, explain: _____

   _____

7. Do you feel that the experience of taking the SAT (and the aftermath of the test) changed your child in any significant way?

   A No

   B Yes

In which of the following ways did the experience change him/her?
(Circle one letter on each line)

	Yes	No	Don't know or can't tell
(1) Increased his/her interest in school.....	A	B	C
(2) Decreased his/her interest in school.....	A	B	C
(3) Expanded his/her thinking about careers.....	A	B	C
(4) Expanded his/her thinking about college.....	A	B	C
(5) Caused him/her to alter his/her school curriculum.....	A	B	C
(6) Increased his/her range of activities in school.....	A	B	C
(7) Increased his/her range of activities outside of school.....	A	B	C
(8) Increased his/her circle of friends.....	A	B	C
(9) Expanded his her interests.....	A	B	C
(10) Expanded his/her educational opportunities..	A	B	C

8. On balance, how beneficial do you think taking the SAT was to your child?

A Much more beneficial than harmful

B Somewhat more beneficial than harmful

C Neither beneficial nor harmful

D Somewhat more harmful than beneficial

E Much more harmful than beneficial

Comments: _____

_____

III. This section of the questionnaire is about your child at home and at school.

1. How far do you expect your child to go in school?

   A Graduate from high school

   B Attend but not graduate from college

   C Graduate from college

   D Attend graduate or professional school

2. How do you feel your child compares with others his/her own age in each of the following areas of ability? (Circle one letter on each line)

	Child is better than most people his/her age	Child is about the same as most people his/her age	Child is worse than most people his/her age	I don't know
(1) Acting ability.....	A	B	C	D
(2) Artistic ability.....	A	B	C	D
(3) Athletic ability.....	A	B	C	D
(4) Creative writing.....	A	B	C	D
(5) Leadership ability.....	A	B	C	D
(6) Mathematical ability.....	A	B	C	D
(7) Musical ability.....	A	B	C	D
(8) Ability to organize his/her work.....	A	B	C	D
(9) Scientific ability.....	A	B	C	D
(10) Public speaking ability...	A	B	C	D

Look at the list again. In which area of ability do you think (s)he is best? _____

If there is a special ability that is not listed in which (s)he excels, write it here: _____

IV. This section of the questionnaire is about you.

1. What is your relationship to the child?

   A Mother

   B Father

   C Guardian

   D Other (What?) _____

2. What is your racial/ethnic origin?

   A American Indian/Pacific Islander

   B Asian American

   C Black

   D Hispanic (e.g., Chicano, Puerto Rican, Cuban)

   E White

   Other (What?) _____

3. How far did you go in school?

   A Eighth grade

   B High school but didn't graduate

   C Graduated from high school

   D College but didn't graduate

   E Graduated from college

   F Went to another school after college

Survey II: Test-Taking History for 1980–81 Young SAT-Takers

Nancy W. Burton

The first contemporary talent search program for boys and girls was started in 1972 by Julian Stanley at Johns Hopkins University. He encouraged seventh and eighth graders with very high mathematics standardized test scores to take the Scholastic Aptitude Test (SAT). Those with the highest SAT-mathematical scores were selected for various enrichment programs (Stanley, Keating, and Fox 1974). The idea soon spread. Today there are seven major national or regional talent search programs and numerous smaller programs (Cohn 1984). In 1985–86, 83,000 students at or below the eighth-grade level took the SAT. Of those test-takers, 49.6 percent were boys and 50.4 percent were girls. Their average verbal score was 355 (standard deviation equals 76); their average mathematical score was 395 (SD equals 82).

Counselors, teachers, and parents naturally wonder about these students. Are too many being encouraged to take the SAT? How do the students feel about their experience? How do they do in high school? Do the colleges that sponsor talent searches have an extra advantage in recruiting these talented youngsters when they graduate from high school?

The study described in this report was sponsored by the College Board to

- Investigate a population of young talent search applicants who took the SAT as seventh graders in 1980–81
- Trace the applicants' test-taking and academic history up to their high school graduation in 1986
- Compare the 1980–81 talent search population with the 1983–84 talent search sample studied by Wilder and Casserly [Survey I in this book]
- Compare the 1980–81 talent search subgroup with the rest of their age group who graduated in 1986 and had taken the SAT at the usual time

Several longitudinal studies of talent search participants have been conducted by the program sponsors themselves. Particularly elaborate follow-ups of Stanley's talent search study, known as the Study of Mathematically Precocious Youth (SMPY), have been reported by Benbow and Stanley (1982) and by Fox and Cohn (1980). While those studies are based on a much more detailed knowledge of individual participants and how they were treated, this study is unique in that it covers a variety of talent identification programs and reports on all students who applied (by submitting SAT scores)—not just participants.

METHODS

Sample Population

A total of 44,224 test-takers were extracted from the 1980–81 SAT history file. These students either were less than 14 years old or had listed 1 of 32 talent search program codes. The following pages and Tables 1 to 4 describe the talent search population as they were in 1980–81. Their characteristics are given in Table 1.

In general the SAT appeared to be difficult, but not necessarily inappropriate, for this population. See Table 2 for the distribution of the first SAT scores on file for the 1980–81 talent search applicants.

For college-bound seniors in 1981, e.g., 13 percent of all verbal scores were below 300, compared with 16 percent of verbal scores for the 1980–81 talent search applicants; 7 percent of mathematical scores were below 300 for both college-bound seniors and talent search applicants. The relatively low means for the talent search population (51 points below the verbal mean and 57 points below the mathematical mean for the college-bound seniors) are due to the large number of scores in the 300–390 range. The fact that most scores in this talent search group were above chance level and exhibited a substantial correlation (about .75 for verbal and .65 for mathematical) with SAT scores earned three to five years later provides evidence that the test may be appropriate for these young test-takers. Other researchers (Minor and Benbow submitted; Pollins 1985) have factor-analyzed the SAT and found the structure of the test for young test-takers similar, though not identical, to the structure for the intended population of eleventh and twelfth graders.

Because the SAT history file is a collection of all active test-takers, several different cohorts of talent search students were captured among the more than

Table 1. Characteristics of 1980–81 Talent Search Population

	Number of Test-Takers	*Percentage of Test-Takers*
Boys	22,495	51
Girls	21,729	49
1 SAT score	42,218	96
2 SAT scores	1,596	4
3 or more SAT scores	410	< 1

Table 2. Distribution of Earliest SAT Scores for 1980–81 Talent Search Population

SAT-Verbal			*SAT-Mathematical*	
Number of Test-Takers	*Percentage* of Test-Takers*	*Score Range*	*Number of Test-Takers*	*Percentage* of Test-Takers*
66	< 1	700–800	226	< 1
477	1	600–690	1,100	2
2,639	6	500–590	5,872	13
12,354	28	400–490	16,109	36
21,433	48	300–390	17,837	40
7,255	16	200–290	3,080	7
367		Median Score	399	
373		Mean Score	409	
80		SD of Scores	88	

*Total does not equal 100% because of rounding.

Table 3. Year of First Testing for 1980–81 Talent Search Population

	Number of Test-Takers	*Percentage of Test-Takers*
Before 10/1978	3,505	8
1978–79	4,515	10
1979–80	10,112	23
1980–81	26,092	59
Total	44,224	100

Table 4. Age Distribution of 1980–81 Talent Search Population

Age	*Number of Test-Takers*	*Percentage of Test-Takers*
10 or younger	82	< 1
11	1,992	4
12	20,639	47
13	12,380	28
14	5,612	13
15	2,912	7
16 or older	607	1
Total	44,224	100

44,000 talent search applicants extracted from the 1980–81 candidate file. The year of first testing for the talent search population is defined in Table 3.

In general, students are first encouraged to participate in talent searches when they are in the seventh grade. The age distribution of young students located in the 1980–81 file is given in Table 4.

Because the cohort of first-time test-takers in 1980–81 should, for the most part, have graduated from high school by spring 1986, the 1985–86 SAT history file was chosen as the end point for this study. The SAT history file maintains test-takers for two years after their expected date of graduation; therefore, seventh graders from the 1978–79 or 1979–80 cohorts could also remain in the 1985–86 file if they participated in the Admissions Testing Program (ATP) during high school. In general, however, the 3,505 students who first tested before October 1978, and most older students who first entered a talent search before 1980–81, will have been retired from the 1985–86 file unless they continued to be active after their scheduled high school graduation.

Establishment of Testing History of Sample

An attempt is made to remove younger students from the SAT history file before they enter high school, so that their early testing activity does not follow them through the college application process. For a complete testing history, the 1980–81 talent search population was matched to the SAT history files for several later years. A total of 32,540, or about 74 percent of the original 44,224, were successfully matched. Some 133 records were lost during matching, leaving 44,091 students, 11,551 of whom could not be found in the 1985–86 SAT history file. Because at least 3,505 (see Table 3) of the 1980–81 population should have graduated by 1983 and therefore should not have been found in the 1985–86 history file, the match rate rises to close to 80 percent.

While the overall match rate in this study was at least 74 percent, the match rate for students scoring over 700 on either the verbal or the mathematical sections was 33 percent. Seventy percent of these extremely high scorers took the test only once or twice; on the average, their age at the last testing was 15. One possible reason for the failure to match these very high-scoring students is that they may have finished high school early. Follow-up studies of talent search participants (Stanley and McGill 1986; Stanley 1986) indicate that some of these students entered college early.

Completeness of the Data

The analyses that follow concentrate for the most part on the 30,000 students who were traced into high school; unlike the analyses presented in Tables 1 to 4, they deal with scores and descriptive data from the students' later high school years. When emphasizing their early 1980–81 performance, I use the convention of referring to them as "boys" and "girls." Otherwise, I refer to them as "men" and "women."

In initial analyses of the high school testing record of this cohort of young test-takers, it was noted that almost a fourth of the students (9,084 out of 44,091) had not filled out a Student Descriptive Questionnaire (SDQ). The usual response rate to the SDQ is around 90 percent. When we look at the data a little further, it becomes clear that the unusually low SDQ response rates are confined to those talent search students who took the SAT only once or twice (see Table 5). Those young students who eventually took the SAT three or more times have a normal or an above normal response rate for the SDQ.

The students identified as having taken the SAT only once are a special subset of the total group. Undoubtedly, some are matching failures—Billy became William the next time around. (Note that 380 of these students, or 5 percent, were found in the 1985–86 file and thus had had some further ATP activity though no additional SAT scores.) Another group of these one-time SAT-takers may have taken the American College Testing Program Assessment (ACT) rather than SAT in high school. At any rate, their failure to respond to the SDQ is of no particular concern, since the talent searches tell them to ignore the SDQ, and the responses of 13-year-olds to questions designed for high school seniors are of questionable validity.

Almost a fourth of the missing SDQs fell into the group that took the SAT only twice. Again, some of these students may be matching failures—they may have already tested twice when we found them in 1980–81, or we may have found them again as young students but not when they were older. Note, however, that the average age at which they last tested (Table 5) is only slightly younger—16.8 compared with 17.1—so the nonmatching hypothesis can't apply to many of these students.

ANALYSIS OF 1980–81 TALENT SEARCH SAMPLE

The 1980–81 talent search population was first divided by sex and then separated again by the number of SATs taken—from 1 to 5 or more. (The largest number of SAT scores found was 16.) For each administration through 4, the mean SAT-verbal, mean SAT-mathematical, and age were computed. For those who took the test 5 or more times, statistics were computed for the last SAT score on record. A number of descriptive variables were also computed separately by the number of times the students were tested. They included three general types: (1) *Academic history variables*—the number of years taken of high school English, mathematics, foreign language, science, and social science; the percentage reporting honors or Advanced Placement (AP) courses in the same categories; the rank in high school class; and the percentage who had taken at least one Achievement Test. (2) *Academic aspirations variables*—the percentage who expected to apply for advanced placement in each of the five academic areas listed above; the number of years of schooling planned beyond high school; and the total number of score reports sent to colleges. (3) *Socioeconomic status (SES) variables*—father's education; mother's education; and income inflated or deflated to 1984 dollars. For each variable, an average for all test-takers, regardless of the number of times the SAT was taken, is also reported.

The basic data are given in Table 6 for men and Table 7 for women. The data are quite regular. Sixty-five percent of the students took the SAT two or three times over the five-year period between 1980–81 and 1985–86. Their scores increased significantly in that time. Both men and women gained nearly 200 points on the verbal sections and 200 points on the mathematical sections. Benbow and Stanley (1982), in their follow-up

Table 5. Source of SDQ Information, by History of SAT Repetition, for 1980–81 Cohort of Young Test-Takers

Number of SAT Admins	*Number of Students*	*Percentage of Students*	*Age First SAT*	*Age Last SAT*	*No SDQ*	*Old SDQ Only*	*New SDQ Only*	*% Both SDQs*
1	7,990	18	13.1	13.1	50	48	1	1
2	11,621	26	13.1	16.8	24	50	22	4
3	16,900	38	13.1	17.1	10	45	39	6
4	5,631	13	13.1	17.1	9	42	34	16
5+	1,949	4	13.1	17.1	8	44	22	26
Total	44,091				N = 9,084 (21%)			

Table 6. Averages of SAT Scores, Ages, and SDQ* Variables for 1980–81 Talent Search Males

N Admins	N Test-Takers	% Test-Takers		Mean and SD of Verbal and Mathematical Scores: First	Second	Third	Fourth	Fifth	Age Test 1	Age Test 2	Age Test 3	Age Test 4	Age Test 5
1	4,151	18.5	V	364(89)					13.1				
			M	405(100)									
2	6,164	27.5	V	387(82)	560(100)				13.1	16.8			
			M	433(94)	628(99)								
3	8,308	37.1	V	372(76)	540(86)	564(90)			13.1	16.8	17.1		
			M	424(85)	624(84)	648(83)							
4	2,762	12.3	V	371(77)	511(84)	547(85)	569(89)		13.1	16.0	16.8	17.1	
			M	433(90)	605(86)	641(80)	662(78)						
5+	1,037	4.6	V	382(77)	480(83)	525(82)	557(84)	586(87)	13.1	15.0	15.9	16.6	17.1
			M	448(89)	573(87)	624(78)	652(75)	676(72)					
Weighted Average			V	375	539	557	566	586	13.1	16.6	16.9	16.9	17.1
			M	425	620	644	659	676					

N Admins	N Test-Takers	N Ach Tests†	% Zero Ach Test	Average Years Taken: English	Math	Lang	Science	Soc Sci	Average % Taking Honors: English	Math	Lang	Science	Soc Sci	Total N Honors
1	4,151	3.6	97.6	4.1	4.2	2.9	3.6	3.4	10	12	3	6	6	0.4
2	6,164	3.5	64.6	4.0	4.0	2.6	3.6	3.4	41	46	16	36	30	1.9
3	8,308	3.5	46.5	4.0	4.1	3.0	3.7	3.4	52	57	22	47	40	2.3
4	2,762	3.7	37.3	4.1	4.1	3.1	3.8	3.4	57	64	25	52	43	2.6
5+	1,037	3.8	36.9	4.1	4.2	3.2	3.9	3.4	64	70	28	59	49	2.9
Weighted Average		3.6	59.2	4.0	4.1	2.9	3.7	3.4	43	47	18	38	32	1.9

N Admins	N Test-Takers	Average % Planning AP: English	Math	Lang	Science	Soc Sci	HS Rank‡	Educ Aspir§	N DIs‖	Father Ed	Mother Ed	Family Income#	% White
1	4,151	14	24	7	15	0	79	5.9	3.0	14.9	13.9	$29,200	87.9
2	6,164	34	45	16	31	7	84	6.3	6.4	15.7	14.8	39,707	91.9
3	8,308	38	50	19	35	12	86	6.3	10.0	16.0	14.9	43,654	92.0
4	2,762	42	59	22	43	14	87	6.7	12.6	16.4	15.2	46,089	89.6
5+	1,037	54	68	25	49	17	90	6.9	15.8	16.7	15.4	47,086	87.7
Weighted Average		34	46	17	32	9	84	6.2	8.4	15.8	14.8	40,354	90.8

*Data taken from new SDQ, if available, or from old if new not available, but recoded for compatibility.

†For those who took at least one achievement test.

‡Recoded to reflect average percentile rank in high school class.

§Recoded to reflect number of years of postsecondary education to which student aspires.

‖DI here means colleges to which score reports were sent.

#In constant 1984 dollars.

Table 7. Averages of SAT Scores, Ages, and SDQ* Variables for 1980–81 Talent Search Females

N Admins	N Test-Takers	% Test-Takers		Mean and SD of Verbal and Mathematical Scores: First	Second	Third	Fourth	Fifth	Age Test 1	Age Test 2	Age Test 3	Age Test 4	Age Test 5
1	3,839	17.7	V	358(86)					13.1				
			M	372(81)									
2	5,457	25.2	V	380(82)	545(102)				13.1	16.8			
			M	395(80)	570(101)								
3	8,592	39.7	V	368(73)	534(86)	557(89)			13.1	16.8	17.0		
			M	392(73)	571(86)	592(88)							
4	2,869	13.2	V	366(74)	508(82)	538(85)	558(88)		13.0	16.2	16.9	17.1	
			M	396(74)	553(83)	587(81)	603(85)						
5+	912	4.2	V	379(77)	481(83)	524(82)	554(85)	579(87)	13.0	15.0	15.9	16.6	17.1
			M	414(76)	528(80)	573(80)	603(79)	626(80)					
Weighted Average			V	369	530	550	557	579	13.0	16.6	16.9	17.0	17.1
			M	391	566	589	603	626					

N Admins	N Test-Takers	N Ach Tests†	% Zero Ach Test	Average Years Taken: English	Math	Lang	Science	Soc Sci	Average % Taking Honors: English	Math	Lang	Science	Soc Sci	Total N Honors
1	3,839	3.5	96.5	4.1	4.1	2.7	3.6	3.4	11	11	4	5	6	0.4
2	5,457	3.5	71.8	4.0	3.7	2.8	3.3	3.3	46	41	18	31	28	1.8
3	8,592	3.5	50.8	4.1	3.9	3.2	3.5	3.4	59	54	28	43	40	2.4
4	2,869	3.6	42.8	4.1	4.0	3.4	3.6	3.4	66	59	32	50	45	2.7
5+	912	3.8	36.7	4.1	4.1	3.3	3.7	3.4	71	68	32	57	47	2.9
Weighted Average		3.6	62.5	4.0	3.8	3.1	3.5	3.3	49	44	22	35	32	2.1

N Admins	N Test-Takers	Average % Planning AP: English	Math	Lang	Science	Soc Sci	HS Rank‡	Educ Aspir§	N DIs‖	Father Ed	Mother Ed	Family Income#	% White
1	3,839	21	18	10	10	1	81	5.9	2.7	14.6	14.0	$28,293	86.8
2	5,457	42	35	22	21	6	85	6.0	5.4	15.4	14.6	38,001	90.6
3	8,592	47	39	27	23	10	87	6.2	9.1	16.0	15.0	43,372	91.2
4	2,869	53	45	30	28	13	88	6.5	11.5	16.3	15.2	45,942	89.6
5+	912	60	52	33	34	15	90	6.9	14.1	16.6	15.5	46,023	87.2
Weighted Average		42	36	23	21	8	86	6.2	7.6	15.7	14.8	39,800	90.0

*Data taken from new SDQ, if available, or from old if new not available, but recoded for compatibility.

†For those who took at least one achievement test.

‡Recoded to reflect average percentile rank in high school class.

§Recoded to reflect number of years of postsecondary education to which student aspires.

‖Colleges to which score reports were sent.

#In constant 1984 dollars.

Table 8. Average Gains from First Testing to Last for 1980–81 Talent Search Population

N Admins	*Verbal Gain*			*Mathematical Gain*			*Years between Admins*
	Men	*Women*	*Total*	*Men*	*Women*	*Total*	
2	173	165	169	195	175	186	3.7
3	192	189	190	224	200	212	3.9
4	198	192	195	229	207	218	4.1
5+	204	200	202	228	212	221	4.0

of the more selective group of talent search participants, found average gains of 150 points on both verbal and mathematical scores by the end of high school.

The patterns of averages for men and women are similar. The sample was nearly equally divided: 51 percent men, 49 percent women. The boys started out very slightly ahead of the girls on verbal scores (6 points) and somewhat ahead on mathematical scores (33 points). The women gained less than the men over time, resulting in a verbal mean 7 points below the men's and a mathematical mean 50 points below the men's by the last testing. Men reported slightly higher parental education and income.

It is common for men to vary more than women on many kinds of variables—physical, behavioral, and intellectual. That is, men tend to have both more extremely low and more extremely high values than do women. (See Maccoby and Jacklin 1974, pp. 114–20, for a review of studies on variability.) These students are supposed to be the top 2 percent to 5 percent of their age group, and one would expect the top 2 percent (as well as the bottom 2 percent) to be more heavily male because of their greater variability. That this talent search population is almost evenly split between boys and girls is therefore unusual. These boys do, in fact, have a very slight superiority in numbers, in scores, and in self-reported family background measures.

By the end of high school, these young men and women were remarkably similar in courses taken, Achievement Tests taken, total number of honors courses reported, and high school rank. It is only in the specific honors and Advanced Placement courses taken that the kind of sex differences frequently observed in the general population emerge. The women tended to take more AP courses in English and foreign languages, while the men concentrated on mathematics and science. Although the specific honors and AP courses varied, the total number of such courses appeared to be equal for men and women. The men sent score reports to a few more colleges than the women did. The number of score reports could simply reflect the slightly higher socioeconomic status of the men, or it may reflect a genuine sex difference.

For both men and women, the students who tested more often also tended to have better academic backgrounds, higher educational aspirations, and higher socioeconomic status. Their SAT scores also increased more—but not much. Those who tested three or more times gained 20 to 30 points more on both the verbal and the mathematical tests than did those who took the SAT twice. The difference between the three-time test-takers and the more frequent test-takers was about 10 points on the average. (See Table 8.)

Comparison Data

1983–84 Talent Search Cohort

A natural comparison group for the 1980–81 talent search population is a more recent talent search cohort. An appropriate sample of young test-takers was drawn by Wilder and Casserly (Survey I in this book) for their study of the attitudes and feelings of talent search youngsters and their parents. Their 1983–84 sample was identified by a method slightly different from that used for the 1980–81 population. From the January 1984 test administration, Wilder and Casserly identified 62,876 students who met the criteria for inclusion in the study of young SAT-takers: they were born in 1970 or later (i.e., they were 13 or younger when they first took the test), and they had designated one of seven major national or regional talent searches to receive their scores or had used the general purpose (DI 1000) code, which was apparently used by some of the smaller talent searches. From among the 62,876 students so identified, the investigators drew a spaced sample of 2,669 students stratified by sex and by the seven major talent searches and DI 1000—a total of 167 students in each of 16 separate cells.

Thus the 1983–84 sample was necessarily somewhat younger than the 1980–81 sample at the time of selection and was also constrained to have equal numbers of girls and boys and equal numbers of participants in the seven major talent search programs. Since analyses by sex and by talent search showed few differences, these restrictions on the 1983–84 sample are unlikely to significantly affect interpretation of the data.

Table 9 displays average test scores and ages for the 1983–84 sample through their freshman year; Table 10 displays the comparable data for the 1980–81 population through their freshman year. The SDQ responses are not shown because of their lack of appropriateness

Table 9. Averages of SAT Scores and Ages for 1983–84 Talent Search Students through Their Freshman Year

N Admins	N Test-Takers	% Test-Takers		Mean and SD of Verbal and Mathematical Scores: First	Second	Third	Fourth	Fifth	Age Test 1	Age Test 2	Age Test 3	Age Test 4	Age Test 5
1	2,303	86.3	V	358(79)					13.5				
			M	393(89)									
2	307	11.5	V	374(78)	430(87)				13.1	14.2			
			M	412(96)	485(106)								
3	55	2.1	V	386(77)	436(74)	493(76)			12.9	13.9	14.9		
			M	405(79)	488(94)	543(99)							
4	2	0.1	V	340(0)	460(30)	535(25)	535(15)		13.0	13.5	15.0	15.0	
			M	545(55)	605(15)	645(15)	735(5)						
5+	2	0.1	V	395(75)	435(5)	430(20)	520(30)	535(5)	13.0	13.5	14.5	15.0	15.5
			M	450(110)	545(105)	575(15)	590(20)	650(40)					
Weighted Average			V	361	431	492	528	535	13.4	14.2	14.9	15.0	15.5
			M	396	486	548	663	650					

Table 10. Averages of SAT Scores and Ages for 1980–81 Talent Search Students through Their Freshman Year

N Admins	N Test-Takers	% Test-Takers		Mean and SD of Verbal and Mathematical Scores: First	Second	Third	Fourth	Fifth	Age Test 1	Age Test 2	Age Test 3	Age Test 4	Age Test 5
1	38,710	92.5	V	366(74)					13.1				
			M	401(81)									
2	2,357	5.6	V	411(84)	481(97)				12.9	14.2			
			M	457(94)	545(105)								
3	739	1.8	V	419(84)	471(88)	521(91)			12.9	13.7	14.8		
			M	467(88)	540(91)	594(89)							
4	26	0.1	V	375(92)	452(99)	498(106)	531(93)		12.2	13.2	13.9	14.8	
			M	476(83)	556(93)	607(92)	652(78)						
5+	4	0.0	V	437(113)	447(36)	462(39)	495(72)	542(95)	11.5	11.8	12.0	12.5	13.5
			M	532(90)	600(102)	605(50)	652(77)	700(81)					
Weighted Average			V	370	478	520	526	542	13.0	14.0	14.8	14.5	13.5
			M	405	544	594	652	700					

Table 11. Averages of SAT Scores, Ages, and SDQ* Variables for 1986 College-Bound Senior Males

N Admins	N Test-Takers	% Test-Takers		Mean and SD of Verbal and Mathematical Scores: First	Second	Third	Fourth	Fifth	Age Test 1	Age Test 2	Age Test 3	Age Test 4	Age Test 5
1	23,041	56.3	V	425(112)					17.4				
			M	483(125)									
2	14,394	35.1	V	441(100)	455(104)				17.1	17.3			
			M	502(114)	526(117)								
3	2,955	7.2	V	430(96)	444(99)	457(103)			16.9	17.2	17.4		
			M	502(109)	522(111)	541(113)							
4	475	1.2	V	425(90)	445(96)	459(101)	468(105)		16.6	17.0	17.2	17.5	
			M	500(108)	529(114)	547(112)	560(115)						
5+	87	0.2	V	404(90)	433(90)	442(102)	470(104)	481(107)	16.0	16.5	16.9	17.1	17.6
			M	489(102)	514(98)	541(101)	561(103)	589(105)					
Weighted Average			V	431	453	457	468	481	17.2	17.3	17.3	17.4	17.6
			M	491	525	542	560	589					

N Admins	N Test-Takers	N Ach Tests†	% Zero Ach Test	Average Years Taken: English	Math	Lang	Science	Soc Sci	Average % Taking Honors: English	Math	Lang	Science	Soc Sci	Total N Honors
1	23,041	3.3	89.5	4.0	3.6	1.9	3.0	3.2	13	11	4	9	8	0.4
2	14,394	3.3	67.7	4.0	3.9	2.5	3.4	3.4	26	26	13	23	21	1.1
3	2,955	3.5	57.1	4.0	4.0	2.7	3.4	3.4	32	33	17	28	25	1.4
4	475	3.6	43.3	4.0	4.1	2.8	3.5	3.3	41	40	17	35	32	1.6
5+	87	3.9	45.5	4.1	4.1	2.8	3.8	3.4	51	49	23	42	36	2.0
Weighted Average		3.3	78.9	4.0	3.7	2.2	3.1	3.2	19	18	8	16	14	0.7

N Admins	N Test-Takers	Average % Planning AP: English	Math	Lang	Science	Soc Sci	HS Rank‡	Educ Aspir§	N Dis‖	Father Ed	Mother Ed	Family Income#	% White
1	23,041	11	12	6	9	7	69	5.3	3.9	14.5	13.6	$34,377	79.4
2	14,394	18	22	10	16	13	73	5.7	8.0	15.0	14.1	39,869	82.8
3	2,955	21	26	12	19	15	76	5.9	11.1	15.4	14.3	43,089	80.9
4	475	28	33	15	25	19	78	6.2	13.8	16.0	14.8	46,219	79.7
5+	87	30	44	21	32	30	84	6.4	17.4	16.1	13.9	47,534	76.6
Weighted Average		14	17	8	13	10	71	5.5	6.0	14.8	13.9	37,102	80.7

*Data taken from new SDQ, if available, or from old if new not available, but recoded for compatibility.

†For those who took at least one achievement test.

‡Recoded to reflect average percentile rank in high school class.

§Recoded to reflect number of years of postsecondary education to which student aspires.

‖Colleges to which score reports were sent.

#In constant 1984 dollars.

Table 12. Averages of SAT Scores, Ages, and SDQ* Variables for 1986 College-Bound Senior Females

N Admins	N Test-Takers	% Test-Takers		Mean and SD of Verbal and Mathematical Scores: First	Second	Third	Fourth	Fifth	Age Test 1	Age Test 2	Age Test 3	Age Test 4	Age Test
1	24,647	54.5	V	411(110)					17.3				
			M	432(112)									
2	16,862	37.3	V	429(99)	446(103)				17.1	17.2			
			M	458(105)	474(108)								
3	3,252	7.2	V	425(96)	439(98)	452(103)			16.9	17.1	17.3		
			M	461(100)	478(104)	498(104)							
4	361	0.8	V	419(96)	437(97)	450(99)	459(101)		16.6	17.0	17.2	17.5	
			M	460(100)	484(104)	502(99)	513(105)						
5+	88	0.2	V	415(86)	441(87)	457(91)	476(105)	492(104)	15.8	16.3	16.8	17.0	17.4
			M	464(104)	497(111)	519(113)	529(120)	556(124)					
Weighted Average			V	419	445	452	462	492	17.1	17.2	17.3	17.4	17.4
			M	444	475	499	516	556					

N Admins	N Test-Takers	N Ach Tests†	% Zero Ach Test	Average Years Taken: English	Math	Lang	Science	Soc Sci	Average % Taking Honors: English	Math	Lang	Science	Soc Sci	Total Honor
1	24,647	3.2	91.5	4.0	3.4	2.2	2.7	3.2	17	10	5	8	9	0.5
2	16,862	3.2	70.3	4.0	3.7	2.8	3.1	3.3	34	23	15	21	21	1.1
3	3,252	3.3	58.8	4.0	3.9	3.0	3.3	3.4	40	30	21	27	26	1.4
4	361	3.4	51.9	4.1	3.9	3.0	3.4	3.4	44	37	17	35	28	1.6
5+	88	3.7	50.0	4.1	4.1	3.3	3.5	3.4	61	55	35	49	42	2.4
Weighted Average		3.1	80.8	4.0	3.6	2.4	2.9	3.1	25	17	10	15	15	0.8

N Admins	N Test-Takers	Average % Planning AP: English	Math	Lang	Science	Soc Sci	HS Rank‡	Educ Aspir§	N DIs‖	Father Ed	Mother Ed	Family Income#	% Whit
1	24,647	14	9	8	6	5	71	5.2	3.6	14.1	13.4	$32,246	76.5
2	16,862	25	15	15	11	10	74	5.5	7.5	14.8	14.1	38,064	80.9
3	3,252	27	19	16	14	13	76	5.7	10.3	15.3	14.4	42,321	80.8
4	361	34	26	16	23	14	78	5.8	12.7	15.6	14.6	44,207	78.4
5+	88	51	40	30	21	26	84	6.4	14.4	15.9	15.4	44,105	69.6
Weighted Average		19	12	11	9	8	73	5.3	5.6	14.4	13.7	35,258	78.3

*Data taken from new SDQ, if available, or from old if new not available, but recoded for compatibility.

†For those who took at least one achievement test.

‡Recoded to reflect average percentile rank in high school class.

§Recoded to reflect numbers of years of postsecondary education to which student aspires.

‖Colleges to which score reports were sent.

#In constant 1984 dollars.

for such young students. There are several differences between the two cohorts:

- The number of young students who retested increased from 7.5 percent for the 1980–81 talent search population to 13.7 percent for the 1983–84 talent search population.
- The average age at first testing increased slightly in the 1983–84 cohort.
- The average first-time scores were essentially identical in the 1983–84 group despite the growth in the number of students participating in talent search testing.

College-Bound Seniors

The most natural comparison group for the 1980–81 talent search population is the cohort of college-bound seniors with whom they will graduate. Therefore, the same data that were collected for the 1980–81 talent search population were also collected for a 10 percent spaced sample (with a random start) of those in the class of 1986 who had taken the SAT at the conventional time. The basic data for the college-bound seniors are given in Table 11 for men and Table 12 for women.

Compared with the subgroup who participated in a talent search, the 1986 college-bound seniors in general have taken fewer academic courses, their parents are less educated and poorer,[1] the sex differences in their course-taking patterns are more pronounced, their score gains are smaller, and they repeated the SAT fewer times. (See Tables 13 and 14.) The size of these differences declines as the number of test repetitions increases. The largest and most stable difference between the two groups is in SAT scores: the talent search group is about 100 points, or nearly one standard deviation, ahead of the overall college-bound group on both the verbal and the mathematical tests. Benbow and Stanley (1982) report that their longitudinal group of talent search participants is two standard deviations above the overall college-bound group.

For talent search students, the average time elapsed between the first and last SAT administrations was about four years, which may go a long way in explaining their larger gains of close to 200 points on both the verbal and the mathematical tests. In fact, the simplest linear model for the talent search students' score gains would predict about 50 points gain for each year between administrations (200 points divided by 4 years). How well would this simple model fit the college-bound seniors' data from Table 14? See Table 15 for an attempt to fit this model to the average score gains observed for 1986 college-bound seniors. For the mathematical test this simple model would fit average gains very well, except for a constant of about 15 points. Perhaps the 15 points can be explained by the initial familiarization with the SAT format acquired at the first testing. The model for

Table 13. Comparison of 1980–81 Talent Search Applicants (Who Tested More Than Once) with All 1986 College-Bound Seniors

Characteristic	*Talent Search*	*All College-Bound*
First SAT		
V	375	424
M	412	466
Last SAT		
V	560	451
M	618	502
Months between first and last SAT	46.8	3.2
% taking SAT more than once (after initial talent search SAT score)	68%	45%
% who took at least 1 Achievement Test	47%	20%
Percentile rank in high school class	86	72
Number of high school years taken in		
English	4.0	4.0
Mathematics	4.0	3.6
Foreign language	3.0	2.4
Science	3.6	3.0
Social science	3.4	3.3
Total number of honors classes	2.3	0.8
% taking honors in		
English	54%	22%
Mathematics	53	17
Foreign language	23	9
Science	43	15
Social science	38	14
% expecting to seek advanced placement in		
English	43%	17%
Mathematics	45	14
Foreign language	23	10
Science	30	11
Social science	10	9
Number of years of education planned after high school	6.3	5.4
Number of colleges designated to receive score reports	9.1	5.8
Family background		
Father's years of education	16.0	14.6
Mother's years of education	14.9	13.8
Family income (1984 dollars)	$42,564	$36,148
% White	90.9%	79.5%

1. The report of "poorer" parents was computed by discounting the incomes reported by the talent search applicants who took the test only once. Reported incomes for one-time test-takers are discounted because only a small number answered the SDQ, the data are at least five years old, and the test-takers were 12 to 14 years old when they answered the question.

Table 14. Average Gains from First Testing to Last for 1986 College-Bound Seniors (10% Sample)

N Admins	*Verbal Gain*			*Mathematical Gain*			*Years between Admins*
	Men	*Women*	*Total*	*Men*	*Women*	*Total*	
2	14	17	15.6	24	16	19.7	0.1
3	27	27	27.0	39	32	35.3	0.4
4	43	40	41.7	60	53	57.0	0.9
5+	77	77	77.0	100	92	96.0	1.6

the SAT-mathematical test now becomes $M = 15 + 50x$, where x equals years between administrations. The simple model doesn't quite fit the verbal means, although there's clearly a systematic relationship between time and average gains for the verbal test as well.

Additional research into the development of mathematical and verbal reasoning over time is possible with the present data base. Questions of interest might include the following:

- Are gains the same for students at different initial score levels? For students of both sexes? For students with different course-taking patterns in high school?
- Can the fit be improved by taking into account the practice effect from multiple testings? Differential gain rates over summer versus winter months?

Like the talent search applicants, the college-bound seniors who tested only once received lower average scores on initial testing. Among college-bound seniors, these one-time test-takers were also the oldest when they took their first SAT. Among talent search applicants there was a very slightly tendency for the multiple test-takers to be slightly younger at their initial testing. Among college-bound seniors who did repeat, those with lower initial scores tended to repeat the test more and also to gain more. (See Table 14.) For talent search applicants, the number of repetitions seemed much less related to the initial score. In fact, some students with high initial scores repeated the test a number of times. Perhaps they were simply repeating a positive experience, or perhaps they were trying to qualify for a competitive special program.

Table 15. Predicting Average SAT Gains for 1986 College-Bound Seniors (Assuming a Simple Linear Model)

Number of Admins	*Years between Admins*	*Predicted Gain*	*Observed Gain–Predicted Gain*	
			Verbal	*Mathematical*
2	0.1	5	10.6	14.7
3	0.4	20	7.0	15.3
4	0.9	45	– 4.0	12.0
5+	1.6	80	– 3.0	16.0

SUMMARY

The 1980–81 talent search population seems to have been representative of the young people who take the SAT. Although the talent search group doubled in size between 1980–81 and 1985–86 (from over 40,000 to over 80,000), the mean SAT scores decreased only 12 points verbal (from 367 to 355) and 4 points mathematical (from 399 to 395). The number of girls increased very slightly more than the number of boys (the percentage of girls grew from 49 percent in 1980–81 to 50.4 percent in 1985–86). The talent search student of today may be slightly older; by 1984 the average age at first testing was 13.4 compared with 13.1 in 1981. Also, today's talent search student may be more likely to take the SAT more than once. Of the 1983–84 talent search group, 13.7 percent had repeated the SAT by the end of their freshman year, compared with 7.5 percent of the 1980–81 talent search group. Nevertheless, given the growth of the talent search phenomenon, the characteristics of the young participants appear to have been remarkably consistent.

The talent search applicants appear to have been an able but not outstanding group. The average last SAT scores for the 1980–81 talent search applicants were 560 verbal and 618 mathematical, about one standard deviation higher than for the average college-bound senior in 1986. Wilder and Casserly (Survey I in this book) surveyed a sample of 1983–84 talent search applicants; 53 percent of the students reported that they were invited to participate in some special services as a result of their talent search participation. While the talent search programs have gone beyond the original purpose of identifying and accelerating the rare young mathematical genius, they do appear to be satisfying the larger group of students who chose to participate.

The talent search population was similar in a number of ways to the rest of the college-bound seniors they graduated with. The pattern of academic high school classes reported was virtually identical. The talent search students sent more score reports to colleges, but that appeared to be mainly a function of the number of times they took the SAT. Both groups sent a little more than three score reports each time they took the test.

The talent search group was slightly ahead of the

rest of the college-bound seniors in their graduating class in average high school rank (86th percentile versus 72d percentile), educational aspirations (6.3 years after high school versus 5.4), mother's and father's education (about one more year for both parents), family income (about $6,000 a year more), and propensity to take the SAT more than once (68 percent compared with 45 percent). The talent search group was significantly behind the college-bound seniors in minority representation (9 percent versus 20 percent).

The talent search applicants were significantly ahead of the other members of the college-bound cohort in more advanced academic areas. The talent search group was about two and a half times as likely to take Achievement Tests, to report honors classes, or to plan to seek advanced placement in college. In fact, they were three times as likely to report honors and advanced placement plans in mathematics and science.

Another purpose of this study was to determine how often the talent search students repeat the SAT. As young students, a small but growing percentage of talent search applicants do repeat the SAT. It is difficult to see what benefit the 7.5 percent of the 1980–81 talent search group (or the 13.7 percent of the 1983–84 group) derived from repeating the SAT before the end of their freshman year. On the other hand, the great majority of talent search students—over 85 percent—wait until a more normal age to retake the SAT. The average age of second testing was over 16. The talent search applicants were also more likely than the average college-bound senior to retake the SAT once they reached the normal test-taking age. This disparity might decrease if the college-bound seniors were matched in ability and income to the talent search group.

Perhaps the most intriguing outcome of this study was the observed pattern of score gains. A very regular pattern of average score gain was observed—about 50 points a year for both verbal and mathematical tests. This gain pattern fit both men's and women's scores, from both talent cohorts (1980–81 and 1983–84), and even the gains observed over short time spans for the average college-bound seniors. It may be that this is quantitative evidence of the slow, steady development of verbal and mathematical reasoning ability. The possibilities of learning more about how verbal and mathematical reasoning develop by further analyses of the 1980–81 talent search population are exciting.

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